

REMARKS

Claims 53, 55, 56, 61, 66 and 69-101 are currently pending in the Application, with claims being 53, 55, 56, 61 and 66 being independent claims. Reconsideration of the Application is respectfully requested.

Examiner Interview

Applicants appreciate the courtesies extended by the Examiner during the telephone interview conducted on February 12, 2004. During the interview, each of the independent claims were discussed with respect to the Berkelman article. The Examiner indicated that it does not appear that the Berkelman article does not disclose the various filtering methods as recited in the claims. Moreover, the Examiner agreed that the Berkelman article does not disclose a command signal that is operative to activate a filter as recited in claim 66.

Rejections Under 35 U.S.C. 112

Claims 53, 55, 56, 61 and 66 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 53, 55 and 56, Applicants have amended the claim to overcome the antecedent basis issues noted by the Examiner. In addition to the antecedent basis issue, the Examiner states that multiple types of filtering are recited in the claim. Applicants have amended the claims to more clearly define the scope of the invention (i.e., to more clearly define the particular filtering that is being recited in the claim).

Regarding claim 61, the Examiner states that "the disturbance filter process" at line 8 lacks antecedent basis. Applicants note that line 4 of claim 61 recites "filtering sensor data to produce input data according to a disturbance filter process." Accordingly, sufficient antecedent basis exists for the recitation of the disturbance filter process in line 8 of the claim. Moreover, Applicants have amended claim 61 to more clearly define the particular filtering that is being recited in the claim.

Regarding claim 66, Applicants have amended the claim to overcome the antecedent basis issue noted by the Examiner.

Based on the above amendments, Applicants respectfully request that the rejections under 35 U.S.C. 112 be withdrawn.



Rejections Under 35 U.S.C. 102

Claims 61 and 66 stand rejected under 35 U.S.C. 102(b) as being anticipated by the article by P.J. Berkelman, R.L. Hollis and S.E. Salcudean entitled “Interacting with Virtual Environments using a Magnetic Levitation Haptic Interface” (“the Berkelman article”).

The Berkelman article discloses a haptic interface device that allows a user to dynamically interact with a simulated environment. The device includes a levitated structure with six degrees of freedom. The device can emulate virtual devices such as gimbals and bearings as well as different dynamic interactions such as hard solid contacts, dry and viscous friction, and textured surfaces.

Claim 61

Claim 61 recites, among other elements, “filtering sensor data to produce input data according to a disturbance filter process including time-averaging the sensor data, the disturbance filter process being associated with the haptic feedback.” The Examiner suggests that the filtering described in Section 3 of the Berkelman article is time based and “effectively time averages the position signal.”

The Berkelman article does not disclose or suggest time averaging the sensor data as recited in claim 61. In fact, the only filtering that is disclosed in the Berkelman article is “filter[ing] frequencies above approximately 25 Hz.” Moreover, the outputs illustrated in Figure 4 of the Berkelman article are not suggestive of a time-averaging filter. In fact, the outputs illustrated in Figure 4 of the Berkelman article suggest otherwise. For example, with reference to the “z position” curve, the “filtered” curve lies on or above the “unfiltered” curve for greater than 70 percent of the displayed interval. Such a curve is suggestive of a filter other than a time-averaging filter. For at least this reason, independent claim 61 is allowable over the Berkelman article.

Claim 66

Claim 66 recites, among other elements, “the sensor being configured to receive a command from a processor in communication with the sensor to at least one of activate and deactivate the filter.” The Examiner states that this claim element is disclosed in the Berkelman article as the computer “programming the control system to tune the digital estimator.” As

discussed during the telephone interview on February 12, 2004, the Berkelman article fails to disclose a command to "at least one of activate and deactivate the filter" as recited in claim 66. For at least this reason, independent claim 66 is allowable over the Berkelman article.

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete response has been made to the outstanding Office Action and, as such, the present Application is in condition for allowance. If the Examiner believes, for any reason, that further personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this application is respectfully requested.

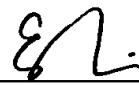
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